BS CURRICULUM

SEAS Students who declare a CS major in Fall 2023 and beyond are required to follow the new curriculum. SEAS Students who declared a CS major before Fall 2023 can follow the new CS Curriculum or continue with the old CS Curriculum.

PREREQUISITES

- SEAS Prerequisites and ENGI E1006: Computing for EAS

CS CORE

- The following 6 courses must be taken:
  - COMS W1004 Intro to CS
  - COMS W3134 Data Structures
  - COMS W3157 Advanced Programming
  - COMS W3203 Discrete Math
  - COMS W3261 CS Theory
  - CSEE W3827 Fundamentals of Computer Systems
- Select 1 Linear Algebra course
  - COMS W3251, APMA E3101, APMA E2101, MATH UN2010, or MATH UN2015
- Select 1 Probability course (new)
  - STAT UN1201, STAT GU4001, STAT GU4203, IEOR 3658, or MATH UN2015
    - MATH UN2015 can double count for Linear Algebra and Probability requirements. This is the ONLY instance a course can double-count

IMPORTANT NOTES

GTE APPROVALS NOT NEEDED

AREA FOUNDATION COURSES

PROBABILITY REQUIREMENT

NO MORE TRACKS

IMPORTANT EXCEPTIONS

- No more than 6 points of project/thesis courses (COMS W3902, W3998, W4901, W6901) and equivalent project/research courses from other departments can count toward the major.
- COMS W3999 Fieldwork cannot be used as a CS Elective.
- No more than one course from each set below may be applied to the major
  - IEOR E3658, STAT UN1201, STAT GU4001, MATH UN2015
  - MATH UN2015, MATH UN2010, APMA E3101, COMS W3251
  - COMS W4771, COMS W4721, STAT GU4241

AREA FOUNDATION COURSES (AFC)

- Select 4 courses from the following list:
  - COMS W4111 Introduction to Databases
  - COMS W4113 Distributed Systems Fundamentals
  - COMS W4115 Programming Languages and Translators
  - COMS W4118 Operating Systems
  - CSEE W4119 Computer Networks
  - COMS W4152 Engineering Software-as-a-Service
  - COMS W4156 Software Engineering
  - COMS W4160 Computer Graphics
  - COMS W4167 Computer Animation
  - COMS W4170 User Interface Design
  - COMS W4181 Security 1
  - CSOR W4231 Analysis of Algorithms
  - COMS W4236 Introduction to Computational Complexity
  - COMS W4701 Artificial Intelligence
  - COMS W4705 Natural Language Processing
  - COMS W4731 Computer Vision
  - COMS W4733 Computational Aspects of Robotics
  - CBMF W4761 Computational Genomics
  - COMS W4771 Machine Learning
  - CSEE W4824 Computer Architecture
  - CSEE W4868 System-on-Chip Platforms

CS ELECTIVES

- 4 COMS courses or jointly listed CS courses such as CSXX/ XXCS that are at the 3000- level or higher, and are at least 3-points

GENERAL TECHNICAL ELECTIVES (GTE)

- 4 courses from the following Columbia or Barnard departments that are 3-point courses, and at the 3000 level or above:
  - Any SEAS department
  - Astronomy
  - Biomedical Informatics
  - Biological Sciences
  - Chemistry
  - Earth and Environmental Sciences
  - Ecology, Evolution and Environmental Biology
  - Mathematics
  - Physics
  - Psychology
  - Statistics
  - Economics